

Attorney Docket No.: SJ-0014  
Inventors: Sorrentino et al.  
Serial No.: 09/584,586  
Filing Date: May 31, 2000  
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This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A method of performing ex vivo expansion of a gene-modified hematopoietic stem cell comprising:

(a) transducing a hematopoietic stem cell with a nucleic acid encoding an ABC transporter, wherein the hematopoietic stem cell is transduced to become a gene-modified hematopoietic stem cell;

(b) expressing the transduced ABC transporter; and

~~(b)~~ (c) culturing the gene-modified hematopoietic stem cell ex vivo wherein the gene-modified hematopoietic stem cell is expanded.

Claim 2 (canceled).

Claim 3 (original): The method of Claim 1 wherein said culturing is performed in the presence of an early-acting hematopoietic cytokine.

Claim 4 (previously presented): The method of Claim 3 wherein the cytokine is selected from the group of cytokines consisting of interleukin-3, interleukin-6, G-CSF, GM-CSF, FLT-3 ligand, and stem cell factor.

Claim 5 (original): The method of Claim 1 wherein transducing the hematopoietic stem cell with a nucleic acid encoding an ABC

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transporter is performed with a viral vector comprising a nucleic acid encoding the ABC transporter.

Claim 6 (original): The method of Claim 5, wherein the viral vector is selected from the group of viral vectors consisting of a herpes simplex viral vector, an adenoviral vector, and adeno-associated viral vector (AAV).

Claim 7 (original): The method of Claim 5 wherein the viral vector is a retroviral vector.

Claim 8 (original): The method of Claim 7 wherein the retroviral vector is a Harvey Murine Sarcoma Vector and the hematopoietic stem cell is transduced by co-culture on retroviral producer cell lines.

Claim 9 (original): The method of Claim 1 wherein transducing the hematopoietic stem cell with a nucleic acid encoding ABC transporter is performed with a DNA vector comprising a nucleic acid encoding the ABC transporter.

Claim 10 (original): The method of Claim 1 wherein the hematopoietic stem cell is a mammalian hematopoietic stem cell.

Claim 11 (original): The method of Claim 9 wherein the gene-modified hematopoietic stem cell expresses a splice-corrected version of the human MDR1.

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Claim 12 (original): The method of Claim 9 wherein the mammalian hematopoietic stem cell is a murine hematopoietic stem cell.

Claim 13 (original): The method of Claim 9 wherein the mammalian hematopoietic stem cell is a human hematopoietic stem cell.

Claim 14 (currently amended): A gene-modified mammalian hematopoietic stem cell that has been (i) transduced with a nucleic acid encoding an ABC transporter selected from the group consisting of MDR1 and BCRP, wherein the ABC transporter is expressed; and (ii) expanded.

Claim 15 (original): The gene-modified hematopoietic stem cell of claim 14 that has been expanded for at least 9 days.

Claims 16-28 (canceled).

Claim 29 (previously presented): The method of claim 1 wherein the ABC transporter is MDR1 or BCRP.